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ABSTRACT

This collection of abstracts is part of a continuing series providing information on recent doctoral dissertations. The 22 titles deal with a variety of topics, including the following: relationships between decoding skills and reading comprehension in college students, speed of retrieval of verbal information and patterns of oral reading errors, word recognition skills and literal comprehension in beginning readers, and hemispheric synchronization and reading disability; relationships between reading and prediction skills, motivation patterns, aural rhythm pattern perception, visual and auditory perception and modality patterns, diet, auditory discrimination and segmentation, and preschool behavior and home environment variables; differences between good and poor readers with regard to thinking patterns, oral reading errors, and accuracy of self reinforcement behavior; differences between boys' and girls' reading abilities in an Israeli kibbutz; reading abilities of migrant children in Florida; self-concept patterns of adequately and inadequately reading adults; intelligence and reading achievement of disadvantaged black tenth grade students; and auditory fusion and response latency in learning disabled, reading disabled, and normal children. (GW)

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Blumenthal, Susan Hahn

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Wells, William

HEMISPHERIC SYNCHRONIZATION AS IT RELATES TO READING DISABILITY

DECODING SKILLS OF COLLEGE STUDENTS IN RELATION TO READING COMPREHENSION

BAKER, Meryl Sue, Ph.D.
The Florida State University, 1977

Major Professor: Robert M. Gagné

Decoding skills ability of college students in relation to reading comprehension was explored. Measures were obtained of the students' non-verbal intelligence, reading comprehension ability, and decoding ability. Decoding ability was measured by (1) the Decoding Skills Inventory (DSI), a 30-item multiple choice test; (2) vocalization latencies recorded in a decoding task requiring subjects to pronounce previously encountered and previously unencountered pseudowords; and (3) a process decoding score which represented the difference between average vocalization latencies to (a) unfamiliar words having regular spelling, not previously encountered, and (b) unfamiliar words having regular spelling, previously encountered in the final reading comprehension paragraph. This last measure was intended to provide an indication of how much decoding a subject did while reading. Multiple regression analysis of the data collected did not indicate a significant relationship between reading comprehension and decoding skills ability as measured by any method employed. Decoding skills ability as measured by the DSI was identified as a predictor of in-process decoding. In addition, a significant relationship between scores on the DSI and decoding task scores was obtained. No significant relationship was found between reading comprehension and non-verbal intelligence. A significant positive correlation was found between non-verbal intelligence and decoding skills ability as measured by the DSI. Results were discussed in terms of implications for the design of reading instruction.

Order No. 77-24,738, 85 pages.

A STUDY OF THE RELATIONSHIP BETWEEN SPEED OF RETRIEVAL OF VERBAL INFORMATION AND PATTERNS OF ORAL READING ERRORS

BLUMENTHAL, Susan Hahn, Ed.D.
Columbia University Teachers College, 1977

Sponsor: Professor Jeannette E. Fleischner

Do children with learning problems who vary in speed of verbal retrieval tend to use identifiable and differing reading strategies? The major objective of this study was the exploration of the relationship between speed of retrieval of verbal information and patterns of oral reading responses in a population of children with learning problems.

Subjects were 91 boys and girls in grades 2 through 5, enrolled in three suburban elementary schools. All children were enrolled in regular class and, in addition, were assigned to the resource room program. No child had below average intelligence, and none had emotional problems or uncorrected sensory defects. Each child was individually tested at two separate sessions. Session 1--A Naming Task, consisting of eight separate charts, required the child to name rapidly colors, numbers, upper and lower case letters, and common objects. Time and errors were recorded. Session 2--Reading into a tape recorder--required each child to read a selection from Reading Miscue Inventory: Stories for Taping, which was approximately a half grade higher than estimated reading level. Miscues, that is, any differences between the observed response and the expected response, were analyzed using categories from the Reading Miscue Inventory.

Findings of the study show that there was no significant relationship between speed of naming and children's oral reading strategies. In addition, it was shown that speed of retrieval on the various separate naming tasks was not related to particular oral reading strategies. The findings of the study lend support to the supposition that children with learning problems tend to use a variety of strategies in approaching difficult reading material. That the children were able to use all available linguistic cues has implications for reevaluation of special programs designed for children with learning problems. Since it has been demonstrated that these children can and do use graphophonic, syntactic, and semantic cues, it may be advisable to focus remedial efforts on the development of programs that support proficiency in all cue systems.

Order No. 77-22,236, 135 pages.

THE RELATIONSHIP AMONG IDENTIFICATION AND PREDICTION SKILLS AND READING ABILITY

BRISTOW, Thomas Cole, Jr., Ph.D.
University of South Carolina, 1977

The purpose of this investigation was to examine whether individuals who are good predictors or guessers are also good readers. A number of researchers in the reading field have suggested that good readers read fewer words on a page and predict the meaning of the passage better based on the words read than do poor readers.

Several tests which measure the abilities to identify and predict or guess the meaning of words or events were administered and scores correlated with several standardized measures of reading ability. The reading tests measures included general reading comprehension, short-term retention and reading flexibility.

The subjects selected for the study included a stratified random sample of 100 students from the freshman class at the University of South Carolina in the fall of 1975. They were selected to provide equal numbers of poor, average and good readers according to scores on the SAT reading test.

The subjects were administered a battery of five tests designed to measure identification and prediction skills in vocabulary memory, structural abstraction, verbal and nonverbal contextual abstraction and general predictive ability. They also took part one of the McGraw-Hill Basic Skills System to measure reading retention and flexibility. The five identification and prediction tests were used as independent variables and the three measures of reading skills were used as dependent variables. A number of analyses were done using the multiple regression and discriminant analysis procedures to examine the relationship of identification and prediction skills individually and in combination to the three reading measures.

The investigation also examined the relationship of vocabulary memory, structural abstraction and contextual abstraction to predictive ability. It was hypothesized that all three skills were related to predictive ability and that vocabulary was a lower level skill than either type of abstraction ability and a prerequisite to them. The analysis of the data led to the following conclusions: 1. Identification and prediction skills are positively and significantly correlated with reading ability. 2. Verbal skills in vocabulary, structural abstraction and contextual abstraction are more important than nonverbal skills in general reading comprehension. 3. The identification and prediction skills interact differently in reading for literal retention or reading flexibility than in general comprehension. 4. Vocabulary memory, structural abstraction and contextual abstraction are all important in reading but more research is needed to determine the order of their importance. 5. Vocabulary memory, structural abstraction and contextual abstraction are important skills used in predicting. 6. Vocabulary memory is a lower level skill than structural or contextual abstraction.

Other conclusions reached through the analyses were: The identification and prediction skills are effective in discriminating between poor, average and good readers; There is little difference between sexes in relation to identification and prediction skills; The identification and prediction skills are as effective as the SAT score in predicting academic success.

Based on the results of this study it appears that identification and prediction skills are important in reading and other cognitive activities. The discussion suggests that a sample with a wide range of reading abilities be used in future studies and several other directions for further research are indicated.

Order No. 77-22,402, 188 pages.

AN INVESTIGATION OF THE PREDICTIVE AND CAUSAL RELATIONSHIPS AMONG SELECTED PRESCHOOL BEHAVIOR AND HOME ENVIRONMENT VARIABLES AND SUBSEQUENT READING READINESS AND ACHIEVEMENT

BROWN, Toliver Jackson, Jr., Ph.D.
The Florida State University, 1977

Major Professor: Howard W. Stoker

Progress in a primary grade reading program was determined for 106 first-born, second-grade students at the end of the school year. Previous data available for this sample included Thomas-Chess Birch temperament ratings, family intactness and socioeconomic status at age four, as well as Metropolitan Readiness Test scores at age six. The predictive and

causal relationships among these variables were determined in the context of a path analysis model, except that it was necessary to eliminate intactness from the model due to attrition of subjects from nonintact homes. A second model, utilizing temperament factor scores was also evaluated and results for the two models were compared. The causal orderings initially hypothesized were accepted as the best representation of the data, but correlations among the residuals indicated common causal contributors external to model, suggesting the need to expand the model in subsequent research. Readiness test results and temperament ratings demonstrated significant direct contributions to reading progress, mediating the contribution of socioeconomic status. When factor scores were substituted, direct contribution of temperament to reading progress was reduced to a nonsignificant level, indicating that the specific variance of the scales had substantially accounted for this contribution. Discussion included limitations to generalizability and implications for practitioners, theoreticians and researchers.

Order No. 77-26,974, 80 pages.

RELATIONSHIPS BETWEEN MOTIVATIONAL PATTERNS AND READING ACHIEVEMENT IN FIRST GRADE CHILDREN

BURNS, Norma, Ed.D.
Hofstra University, 1977

The major purposes of this study were: (1) to determine if first grade children classified as having high motivation for achievement performed differently than first grade children classified as having low motivation for achievement on selected measures of reading achievement when intelligence was held constant; (2) to determine the relative contribution of the motivational variables as factors in predicting the reading achievement of first grade children; and (3) to determine if first grade children classified as having high or low motivation for achievement performed differently on selected measures of reading achievement given under varying incentive conditions. A subsidiary purpose was to determine if an interaction between motivation for achievement and sex affected performance on any of the measures employed.

A first grade sample of 164 middle-class children was initially tested with Adkins and Ballif's standardized test of motivation to achieve, Animal Crackers. Eighty subjects were selected from the total of 164 first grade children by drawing 25 percent from the top and 25 percent from the bottom total raw scores on Animal Crackers, with forty subjects thus designated as high and forty as low in motivation to achieve. The Pintner-Cunningham Primary Test was administered to the eighty subjects to assess intelligence. Two equivalent, alternate forms of the Metropolitan Reading Achievement Test, Primary 1, were administered, with the first form given to all the subjects under standardized procedure only, and the second form given approximately one week later under four varying incentive conditions: A Control group performed under standardized procedure only. Knowledge of Correctness, Praise, and Material Reward groups performed respectively under one of the three varying incentive conditions.

The major findings indicated: 1. The reading achievement test scores for high motivation level first grade children were significantly higher than the reading scores for low motivation level children with IQ held constant. 2. No significant difference in reading achievement performance was found between high or low motivation level first grade boys and girls with IQ held constant. 3. The component scores for high motivated first grade children were significantly higher than those for low motivated children on the five subscales of Animal Crackers. There were no significant differences for high motivated subjects within the five subscales. For low motivated subjects, Enjoyment and Self-Evaluation were significantly lower than Purposiveness and Instrumental Activity. 4. Reading achievement scores for first grade children were significantly predicted from a linear combination of Self-Evaluation, Enjoyment, and Self-Confidence (in that order). The addition of Instrumental Activity and Purposiveness did not add significantly to prediction. 5. The reading scores for high motivated first grade children were significantly higher under Praise and Material Reward as compared to Control and Knowledge of Correctness. While the reading scores for low motivated first grade children showed improvement under Praise and Material Reward, they did not differ significantly among the four reward categories.

The findings appeared to support the following conclusions: (1) The motivational variables are measurable and bear a strong relationship to reading achievement. (2) There is no significant interaction between motivation to achieve and sex on reading achievement at the first grade level. (3) High motivated first grade children demonstrate high, positive integration of the motivational components, whereas low motivated children show weaknesses and a lack of integration among the motivational components. (4) A differential predictive function for the motivational variables may exist between first grade children according to differences in socio-economic or cultural classification. (5) First grade children appear to respond to the more concrete rather than abstract forms to reward. (6) The relative strengths of the motivational variables can be defined and developed through appropriate reinforcement procedures at the first grade level, thereby increasing the possibilities for early success in reading.

Order No. 77-26,896, 169 pages.

AN EXPLORATORY STUDY ON THE RELATIONSHIP BETWEEN MARGINAL AND SUCCESSFUL SECOND GRADE READERS AND THEIR THINKING PATTERNS

CARR, Joyce Badgett, Ph.D.
The American University, 1977

The purpose of this exploratory study was to use Piaget's cognitive tasks to investigate the thinking patterns of marginal and successful second grade readers. The seven Piaget tasks selected for assessment of the subjects were representative of two areas of thought, logic and space. The experimental design for the study consisted of an analysis of two matched groups of second grade pupils selected from a city wide school population. The pupils were matched on five variables: sex, race, age, grade, and intelligence quotient with one standard deviation in reading score between each matched pair.

The responses given by the matched pairs were analyzed statistically by the use of the t-test for related measures. Of the seven Piaget tasks employed in the study, one, pictorial space was found to reveal a significant difference ($t = 4.369$, $df = 13$, $p < .001$) in thinking patterns between the two groups with marginal readers significantly below successful readers. Another Piagetian spatial task, projection of a straight line, while not significant, clearly showed a trend that could become significant, if used with a larger population. When the variables of sex, race, age, grade, and intelligence quotient are controlled and subjects are selected from the public school pupulation, there is, with one exception of conservation of form, no significant difference in cognitive functioning between marginal and successful readers.

The results of this exploratory investigation suggest that Piagetian spatial tasks seem more sensitive to the differences between marginal and successful readers than Piagetian tasks of logic. Piaget's spatial task of form recognition and reproduction would be a viable addition to a diagnostic battery of assessments. It is recommended that a study that would examine the applicability of Piagetian spatial tasks as an accurate indicator of reading readiness would be of benefit to the field of special education. Order No. 77-27,431, 93 pages.

ORAL READING ERRORS OF GOOD AND POOR ELEMENTARY READERS; AN EXAMINATION OF DIFFERENCES AND SUSPECTED CAUSES

DEWITZ, Peter Arnold, Ph.D.
Claremont Graduate School, 1977

Research into the nature of reading disorders has numerous areas of conflict. A paramount concern of many researchers is isolating the stages in the reading process where poor readers have difficulty. Some theorists contend that the causes of poor reading lie at the word level. Disabled readers have difficulty recognizing words and mapping sound patterns onto graphic symbols. A contrasting view sees reading failure resulting from difficulties with connected text. Disabled readers may have problems anticipating or predicting words because they misuse the contextual constraints of language. This study is an attempt to resolve this disagreement and to present a clearer picture of a disabled reader's sources of difficulty.

Good and poor readers were identified from a population of fifth graders using two standardized reading tests and the judgement of the classroom teachers. From these two groups, twenty-five good and twenty-five poor readers were randomly selected.

In the current study a reader's performance while reading paragraphs was compared to his performance on a word list task. The subjects first read passages which they had never seen before and their substitution errors were recorded. For each subject an individual word list was compiled from the words which presented difficulty in the paragraph task. The subjects' responses to connected discourse were then compared to their responses on the word list in order to tease out the possible causes of misreading.

The readers' responses were analyzed in three ways. 1) The degree of graphic similarity between the observed response and the expected response was determined using Weber's (1970) Graphic Similarity Index. 2) The grammatical acceptability of the substitution errors was determined using the criteria in the Reading Miscue Inventory (Goodman and Burke, 1970). 3) The responses were rated as either real words or nonsense words and percentages were computed. An analysis of variance with repeated measures was used to test the significance of the data for each dependent measure.

The study yielded the following results. Good and poor readers substitute short words that fit grammatically and preserve the syntactic structure of the sentence. While the good readers do this consistently, 20 percent of the poor readers' errors on short words do not fit grammatically, but rather match graphically. The poor reader will ignore grammatical constraints to substitute a graphically similar word; the good reader will not.

On difficult long words all subjects tend to ignore grammatical constraints. The response of the good readers tend to be highly graphically similar nonsense words, while the response of poor readers are real words not as graphically similar. The nonsense word responses of good readers indicate that when they encounter difficulty they attempt to "sound out" words; the poor reader responds with a familiar graphically similar real word. The poor reader continues to use a word recognition strategy that is characteristic of beginning readers who have not yet begun to use the sound/symbol correspondence rules. For all subjects the less critical errors, those made on short words, are influenced by context, while the more critical errors are independent of context. Both good and poor readers have difficulty recognizing some long words regardless of the contextual conditions, suggesting that the causes of misreading lie at the word level.

Order No. 77-22,466, 157 pages.

AN INVESTIGATION OF SELF-REINFORCEMENT BEHAVIOR AND LOCUS OF CONTROL OF ACHIEVING READERS AND TWO TYPES OF MILDLY UNDERACHIEVING READERS

FISHER, Robert, Ed.D.
Temple University, 1977

The major purpose of this study was to determine whether measures of accuracy of self-reinforcement behavior involving reading and nonreading tasks and a measure of locus of control relating to academic pursuits systematically differentiated an achieving reader population and two types of mildly underachieving reader populations. A second purpose was to ascertain the interrelationships between accuracy of self-reinforcement behavior and locus of control.

Three general relationships were examined: How are reading skill differences related to total, positive and negative errors of self-reinforcement behavior on a word recognition, comprehension and nonreading task? How are reading skill differences related to locus of control, internal orientation for success and internal orientation for failure? When reading groups are combined, how are positive and negative errors of self-reinforcement behavior related to internal orientation for success and failure?

The sample consisted of 45 eighth grade boys from a suburban school district. On the basis of the Daniels Informal Word Recognition Inventory and the Temple University Informal Reading Inventory the sample was divided into an achieving reader group (Group A), a comprehension deficit group (Group C) and a word recognition deficit group (Group W). The groups were equated for race, age, socioeconomic status, grade placement and freedom from grade failure. Although all subjects had Slosson Intelligence Test scores between 90 and 115 Group A had a significantly higher mean IQ score than Group W. In group situations subjects were administered the Intellectual Achievement Responsibility Questionnaire (IAR). The IAR yielded measures of internal orientation for success (I+) and internal orientation for failure (I-). Subjects were individually administered word recognition, comprehension and nonreading tasks. Following each trial of these tasks subjects reinforced themselves by taking zero, one or two chips. For each task the discrepancy between the number of chips taken and actual performance was used to obtain three types of accuracy of self-reinforcement scores. The Positive Discrepancy Score (PDS) involved overpositive self-reinforcement and the Negative Discrepancy Score (NDS) involved overcritical self-reinforcement. The Total Discrepancy Score (TDS) consisted of the sum of PDS and NDS.

The relationship between reading groups and accuracy of self-reinforcement behavior was examined by means of a one-way analysis of covariance design with IQ serving as a covariate. Additionally, the magnitude of possible positive discrepancies or the magnitude of possible negative discrepancies served as the second covariate when PDS or NDS were examined. The relationship between reading groups and locus of control was examined by use of analysis of covariance with IQ as the covariate. The relationship between accuracy of self-reinforcement behavior and locus of control was investigated by means of a partial correlation analysis. IQ and possible positive discrepancies or IQ and possible negative discrepancies were statistically controlled.

Unexpectedly, on the reading tasks as well as the nonreading task, PDS, NDS and TDS did not differentiate reading groups. As expected, there were no significant I+ or I- differences among groups. Also as expected, when the groups were combined there was a significant correlation between I+ and nonreading task PDS. An unexpected significant correlation also occurred between I+ and word recognition task PDS. However, there was no significant relationship between I- and nonreading task NDS. These results suggested that accuracy of self-reinforcement behavior and achievement locus of control are not significantly related to mild reading skill deficits. They did, however, partially support the view that there is a significant relationship between accuracy of self-reinforcement behavior and achievement locus of control.

Order No. 77-21,759, 150 pages.

SEX DIFFERENCES IN AN ISRAELI KIBBUTZ SYSTEM: READING DISABILITIES, MATURATION AND SEX-ROLE STANDARDS

GROSS, Alice Dzen, Ed.D.
Boston University School of Education, 1977

Major Professor: Thomas E. Culliton, Jr.

Inconsistent and contradictory findings across cultures, with respect to sex differences in reading ability and disability raise doubts about three widely accepted physiological explanations for such differences. They are as follows: "Maturational Lag," "Crossed Dominance" and "Vulnerability of the Male Organism." Additional doubts are raised due to recent disclosures of sex biases in determining who shall be labeled as a reading disability. In order to overcome some of the inconsistencies found in these explanations, as well as the equivocal evidence from this culture and other cultures, this study was undertaken.

The particular culture used to test these assumed explanations was a kibbutz system within the State of Israel. This specific population is most appropriate to test hypotheses about sex differences due to its philosophy and practices. In particular the lack of separation of boys and girls and the relative lack of differentiation of socialization practices helped clarify the roles physiology and socialization play in reading.

The first three research hypotheses advanced for this study were that no differences exist between kibbutz boys and kibbutz girls on the basis of: (1) reading performance level; (2) reading readiness level; and (3) rate of maturational growth. The fourth and fifth research hypotheses advanced the ideas that no differences exist between kibbutz children on the basis of sex and reading level with respect to the correlates of (4) crossed dominance and (5) psychopathological scores. Research hypothesis (6) advanced that second-grade boys taught reading

by a male teacher will not perform at a higher reading level than second-grade boys taught reading by female teachers. Research hypothesis (7) advanced the idea that both kibbutz girls will perceive the activity of reading as sex-appropriate.

Ninety-nine second-graders and one hundred and eight fifth-graders were administered a reading test and a measure for sex-role standards on reading. The reading scores were further used to discriminate two sub-groups within the tested population; superior readers and disabled readers. The two subgroups were administered tests for crossed dominance. In addition, they were evaluated on 12 additional indices of psychopathology.

The Bender-Gestalt visual-motor coordination test served as both a reading readiness and a maturational measure. Forty-two kindergarten boys and fifty-five kindergarten girls were administered this test.

An analysis of test scores for reading level and for reading readiness level, among Israeli kibbutz children demonstrated no sex differences. In addition, no sex differences were evident in percentage of reading disability cases and in level of maturational development. Crossed Dominance, and twelve additional indices of psychopathology were found to be unrelated to cases of male reading disability as was sex of teacher. Therefore, these analyses do not lend support to the three physiological explanations purporting to explain male reading disability. Neither do they lend support to the cultural explanation that assumes male reading teachers will significantly improve boys' reading performance. The one variable demonstrating significance for sex differences was that of sex role standards for reading. Boys saw reading as significantly more masculine than girls. In other words, the same kibbutz children who perceived reading as sex-appropriate also performed at a high reading level. These findings indicate a relationship between sex role standards for reading and level of reading performance. Order No. 77-21,645, 213 pages.

READING ACHIEVEMENT OF FLORIDA MIGRANT CHILDREN WITH DIFFERING LEVELS OF SELF-CONCEPT

JOHNSON, Arthur Charles, Jr., Ph.D.
The Florida State University, 1977

Major Professor: Herman Frick

The purpose of this study was to determine whether there was a difference in the reading achievement of migrant children with differing levels of self-concept. Mexican-American migrants (N=176), in the second through fifth grades, were administered the Comprehensive Tests of Basic Skills reading subtests and the Piers-Harris Children's Self-Concept Scale. An analysis of variance revealed a significant difference in the means of the reading achievement scores assigned to the student's corresponding quartile level of self-concept. Subsequent testing with the Newman-Keuls statistic indicated that the reading achievement mean value in the upper self-concept quartile was significantly higher than reading achievement means of the lower, lower middle and upper middle self-concept quartile groups. However, no difference was determined between the reading achievement means values of the latter groups. Supplementary findings in this study were: migrant children had a significantly lower self-concept than non-migrant children; no pattern of decrease for the migrant children's self-concept existed.

Order No. 77-22,120, 99 pages.

AUDITORY FUSION AND RESPONSE LATENCY AMONG LEARNING DISABLED, READING DISABLED, AND NORMAL CHILDREN

KIDDER, Herman Charles, Ph.D.
Wichita State University, 1977

The purpose of this study was to compare auditory fusion for successive acoustic events and latency of response by normal children with those of learning disabled and of reading disabled children. One hundred thirty-five subjects ranging in age from seven through nine years listened to 270 pairs of tones which were controlled for frequency (250, 500, 1000, 2000, 4000 Hz), intensity (20, 40, 60 dB SL) and duration (17 msec). Each stimulus item consisted of two tone-pulses separated by an interpulse interval that varied systematically from 0 through 40 msec. Trials were presented in both ascending and descending sequences to conform to a Method of Limits Procedure.

Duplicates of the stimulus tapes created by McCroskey and Davis (1976) were made by using the same tape recorder (Magnecord 1022) for playback that was used for the master tape. The duplicates were recorded on the tape recorder (Magnecord 1021) that was used in this investigation. The signals were measured with the Tektronix storage oscilloscope and compared with signals on the master tape. No difference was found.

The primary statistical tool was an analysis of variance with repeated measures. Results indicate: (a) auditory fusion is different among groups of learning disabled, reading disabled, and normal children; (b) frequency of stimulus has differential effects upon auditory fusion of learning disabled, reading disabled, and normal children; (c) ascending and descending modes of presentation yield the expected differences in fusion thresholds; (d) the latency of response to stimuli varies among learning disabled, reading disabled, and normal children; (e) response latency on an auditory fusion task is shorter for reading disabled children than for learning disabled and normal children; (f) response latency remains the same with regard to variations in stimulus frequency; (g) response latency is influenced by the intensity of the signal; and (h) mode of presentation has no effect on the latency of response of learning disabled, reading disabled, and normal children.

It is concluded that: (1) auditory fusion is accomplished sooner by normal children than is true for either learning disabled or reading disabled children; and (2) the response latency of reading disabled children is distinctly shorter than that of normal and learning disabled children. The fusion results suggest that the auditory systems of normal children are capable of making finer temporal discriminations than the auditory systems of children with reading or learning disabilities.

The shorter response latencies of the reading disabled children may suggest a possible willingness on the part of the reading disabled children to guess rather than to ponder the decision.

Order No. 77-25,055, 145 pages.

SELF-CONCEPT PATTERNS OF INADEQUATE AND ADEQUATE ADULT READERS

KLIMES, Anna Homenchuk, Ed.D.
Andrews University, 1977

Chairperson: Ruth R. Murdoch

Problem

Many of the difficulties which people experience are to a large extent the consequences of faulty perception of themselves. Academic success or failure appears to be deeply rooted in the person's self-concept. The purpose of the study was to analyze the components of self-concept of inadequate and adequate adult readers to determine what patterns of self-concept emerge in various groups. Inadequate and adequate readers were grouped according to sex, race, age, and type of educational institution.

Method

The Tennessee Self Concept Scale was selected for the study. Measuring positive self-concept, it is composed of five self-concept components--physical, moral-ethical, personal, family, and social--and three self-concept dimensions--identity, self-satisfaction, and behavior. In addition the Michigan State General Self-Concept of Ability Scale was employed to measure academic self-concept.

Nine hypotheses were developed for the study. The first two compared the means of the total sample and ten subgroups to the normal population. This was tested by a z-test to compare a single sample mean to a hypothesized population mean with known variance. Four hypotheses dealt with comparing the centroids of self-concept dimensions and components of inadequate and adequate readers to the centroid of a normal population. These were tested by a one-sample T^2 test. Three hypotheses were tested by discriminant analysis to determine which dimensions, components, and subcomponents exerted the greatest relative weights in separating the inadequate from the adequate readers.

The 569 subjects for the study were drawn from the universities, community colleges, and continuing-education institutions of southwestern Michigan during the school year 1976–1977.

Results

The self-concept mean of inadequate readers on the whole sample was significantly lower than that of the normal population. The self-concept mean of adequate readers on the whole sample was also significantly lower than the population mean. Nine out of ten of the subgroups of inadequate readers had mean self-concepts which were significantly lower than that of the normal population. Only the mean self-concept of inadequate black readers was similar to a normal population. Of the adequate-reader subgroups, six out of ten were significantly lower than the normal population.

The centroids of the dimensions of self-concept and the centroids of the components of self-concept were significantly lower than the population norm for both the inadequate and the adequate groups.

In determining the relative weights of the dimensions, the components, and the subcomponents of self-concept to best separate inadequate and adequate readers, it was found that the academic self-concept has the greatest weight for readers that were male and female and those who attended universities and community colleges.

Conclusions

On the basis of the findings the following conclusions emerged: 1. Inadequate and adequate adult readers in this study have a lower self-concept than the normal population. 2. All categories of inadequate readers except black inadequate readers show significantly lower self-concepts than the normal population. 3. The centroid of the self-concept dimensions and self-concept components of inadequate and adequate readers were significantly different from the centroid of the normal population of the Tennessee Self Concept Scale. 4. On a linear combination of the components and subcomponents of self-concept, the positive academic self-concept exerts the greatest weight that significantly separates inadequate and adequate adult readers. 5. Fewer variables separate inadequate and adequate university-reading students than community college and continuing-education students. 6. The physical component and subcomponents of self-concept tended to characterize the inadequate readers at universities and continuing-education institutions while the academic self-concept characterized the adequate readers. 7. The moral-ethical self-concept somewhat characterized all adequate male and female readers but strongly characterized the adequate readers from the continuing-education institutions. Order No. 77-27,582, 143 pages.

AN INVESTIGATION OF THE RELATIONSHIP OF AURAL RHYTHM PATTERN PERCEPTION TO READING SKILLS OF SECOND GRADE STUDENTS

LANGILLE, Connie Martha, Ph.D.
The University of Michigan, 1977

Chairman: Charles F. Lehmann

It was the purpose of this study to examine the reading vocabulary and comprehension abilities of second grade students in relationship to rhythm pattern perception and auditory discrimination. In addition the effects of sex and I.Q. on these variables were tested.

Interpretation of the data indicated that students who perceive rhythm patterns also score highly on vocabulary and comprehension tests. Auditory discrimination skills were related to the reading vocabulary and comprehension skills. Sex and I.Q. did not affect rhythm pattern perception, reading skills or auditory discrimination skills.

The sample was composed of sixty-two second grade Caucasian children from a middle class socio-economic environment. The students tested had been taught reading skills from the Programmed Reading of Sullivan Associates.

Findings seemed to indicate that rhythm pattern perception skills are related to reading vocabulary and reading comprehension skills. Findings also seem to indicate that auditory discrimination skills were related to reading vocabulary and reading comprehension skills. Further investigation of syllabic rhythm patterns and phrase rhythm patterns is needed if we are to define clearly the role of rhythm patterns in the reading process. Order No. 77-26,289, 113 pages.

THE RELATIONSHIPS BETWEEN SPEED AND ACCURACY OF WORD RECOGNITION AND LITERAL COMPREHENSION IN BEGINNING READERS

McCORMICK, Christine Mueller, Ph.D.
University of Minnesota, 1977

The goal of reading is to comprehend, but there are prerequisites to comprehending, such as decoding. Components of decoding include word recognition accuracy and word recognition speed. Although factors such as accuracy have been previously explored, the role of word recognition speed is still in the early stages of investigation. Earlier studies have also examined the size of the perceptual unit used by skilled readers, but no data on the size of the perceptual unit used by beginning readers are presently available.

This study investigated the following questions: 1) How is accuracy of word recognition related to literal comprehension in beginning readers? 2) How is speed of word recognition related to literal comprehension and accuracy in beginning readers? 3) How are words processed (letter-by-letter or parallel) in beginning readers?

In this study 28 normal second-grade children and 39 educable mentally retarded children were used as subjects. The children were asked to recognize by naming first-grade and second-grade words. The data collected from each child were accuracy of isolated word recognition and response latency of those words accurately recognized, as well as measures of comprehension on both oral and silent passages composed of the words recognized individually. The data were analyzed using correlation, multiple regression and analysis of variance to discover how word recognition accuracy and latency were related to literal reading comprehension. Partial correlations were also used to determine the contribution of accuracy to comprehension once latency had been partialled out. The question of serial or parallel processing was examined by first applying one-way analysis of variance with average response latency as the dependent variable. The independent variable was word length. Following this overall significance test, trend analysis and Neuman-Keuls tests were used on the average response latencies across increasing word lengths to clarify the relationship between word length and speed of word recognition.

The results of Questions 1 and 2 concerning the relationships between word recognition accuracy, word recognition speed and comprehension may be summarized as follows: 1. Accuracy is significantly correlated with literal comprehension; high accuracy is associated with high comprehension. 2) Speed of word recognition is significantly correlated with high accuracy and high literal comprehension. 3) Speed of word recognition offers more information about predicting literal comprehension than accuracy data only when high accuracy (in this study 95%) has been achieved. Similarly the results to Question 3 concerning the unit of perceptual processing used by beginning readers may be summarized: 4) Perceptual processing in these beginning readers is serial; a linear function best describes the trend among latency sums for words of increasing lengths for both groups and all accuracy categories. The most accurate readers ($\geq$ 95%) in both groups showed the slightest increments in latency as word length increased, but were still taking significantly longer to process the longer words.

The evidence supports the notion that reading instruction should consider not only how to best teach decoding skills, but also consider how to facilitate speed of word recognition once decoding skills have been achieved. Reading instruction should consider how to facilitate the transition from the serial processing of the beginner to the more parallel processing of the skilled reader. Order No. 77-26,133, 109 pages.

INTELLIGENCE AND READING ACHIEVEMENT OF BLACK DISADVANTAGED TENTH GRADE STUDENTS

MANNING, Emma Jean, Ed.D.
The University of Oklahoma, 1977

Major Professor: Robert L. Curry

The purpose of this study was to investigate the relationship between intelligence and reading achievement scores of black disadvantaged tenth grade students classified as lower socio-economic status by the Two-Factor Index of Social Position.

Data were collected from fifty students with a proportionate number of males (N=25) and females (N=25) on the Henmon-Nelson Test of Mental Ability (Form A), the Stanford-Binet Intelligence Scale (Form L-M) and the Gates-MacGinitie Reading Test (Survey F). A Pearson-product moment correlation coefficient, a multiple correlation analysis and analyses of variance were used to test three hypotheses of the study.

The results of the statistical analysis indicated that a significant relationship existed between the scores obtained by the students on the Henmon-Nelson Test of Mental Ability and the Stanford-Binet Intelligence Scale; and between the subtest scores obtained on the Gates-MacGinitie Reading Test and the Stanford-Binet Intelligence Scale. There were no significant differences between the scores of males and females on the subtests of the Gates-MacGinitie Reading Test.

Order No. 77-21,386, 73 pages.

READING: CUE UTILIZATION, ACHIEVEMENT, AND COMPREHENSION IN AN ADOLESCENT POPULATION

OTTO, Jean Ann, Ed.D.
Indiana University, 1977

Chairman: Dr. Carolyn Burke

This study was designed to determine the relationship between adolescent readers' use of linguistic cues and their achievement and comprehension. It is embedded in the context of Behaviorist and Gestaltist theories of this relationship. Previous research has studied use of these cues in isolation and related this use to reading ability or comprehension in children. Here all interrelationships were tested and described for readers representing a broad range of background characteristics at the adolescent level. Thus, the study provides a basic analysis of reading behavior which is associated with reader success on two dimensions.

96 Eighth and ninth graders from seven Catholic schools in two midwestern states were presented with passages and comprehension questions adapted from the California Achievement Tests. 5,180 Oral reading responses which varied from text (miscues) were evaluated. Each miscue was rated for the achievement level of the subject, the comprehension of the passage in which it occurred, its graphic, grammatical and semantic approximation to the text word, and whether or not it was corrected. It was assumed that cue use is evidenced by a change in probability of correction as cue match to text changes.

Twelve hypotheses of 31 tested within a factorial design described significant sources of variation. Ten of these specifically described the nature of cue use and/or its relationship to reader success. The complete sample showed use of graphics, grammar, and simultaneous use of grammar and semantics. Good readers used semantics, while poor readers ignored this variable. Poor readers appear to use semantics to correct grammatical problems while good readers use grammar to correct semantics. The study also indicated that low achievers comprehending material and all high achievers utilize graphics. Thus its relationship to successful reading is not invariate. The relationship of graphics to grammar shows that poor readers improve comprehension by increased correction of partial grammatical, better graphic miscues, while good readers do so by decreasing use of graphics and more attention to grammatical differences. Similarly, poor readers comprehend better with increased attention to graphics, while good readers gain understanding with increased attention to how their response related to text meaning. Finally, the interrelationships among all cues was found to vary across the four groups. Poor readers who do not comprehend show minimal use of all cues when match on each dimension is specified. When they do comprehend material, they have done so with increased attention to all cues, but without any clear priorities. Good readers make more use of semantic differences even when they do not comprehend material, directing information gain at the graphic and grammatical levels. When good readers comprehend material they use semantics as the primary cue in verifying responses.

These results were formulated to generate four models of reading behavior consistent with Goodman's psycholinguistic theory. Comparison of readers' cue testing behavior indicates that primary testing of semantics distinguishes good readers from poor readers, and that the ease of entry of good semantic information into memory is associated with comprehension. Patterns within the models indicate how good readers develop independent strategies for acquiring new knowledge at the grammatical and graphic levels, accounting for their ability to deal with increasingly complex material over time. In general, the research reviewed in this study and the results of data here support Psycholinguistic theory and a Gestalt orientation to perception processing over common hierarchical models and a Behaviorist orientation.

Order No. 77-27,010, 125 pages.

THE RELATIONSHIP OF VISUAL AND AUDITORY PERCEPTION AND MODALITY PATTERNS TO READING ACHIEVEMENT AND INTELLIGENCE

PECK, Nancy Louise, Ed.D.
University of Miami, 1977

Supervisor: Helen K. Smith

Purpose

The purpose of this study was, first, to investigate the relationship of visual and auditory perceptual abilities of reading disability children to reading achievement and intelligence and, second, to determine whether the resulting modality patterns reflecting perceptual strengths and/or weaknesses are related to reading achievement and intelligence.

Statement of the Problem

Matching instruction to a pupil's modality strength is a common educational practice, particularly when the pupil has a reading disability. Recorded case studies indicate that perceptual weaknesses in the auditory and visual modalities are present in large numbers of children who also have reading problems. This condition implies that a relationship may exist between perceptual modality strengths and weaknesses and reading achievement in children with a reading disability. Though teacher observation and recorded case studies appear to bear this idea out, the research to date does not clearly support such a position. If this modality concept is to remain a guideline for teachers of children with reading problems, further research appeared to be needed to add clarity to the question of modality as it relates to reading.

Procedures

The subjects for the study were 53 pupils ranging in age from seven to nine years old who had demonstrated at least a one year deficit in reading, adequate visual and auditory acuity, an intelligence quotient of 80 or above, and no primary emotional problems. Subjects were chosen from two local private schools designed to serve children with reading disabilities. All subjects were given six subtests of the Perceptual Test Battery (PTB) which assessed visual discrimination, visual memory, spatial orientation, auditory discrimination, auditory memory, and auditory sequential memory and the Gates-MacGinitie Reading Test. The verbal and performance scaled scores on the Wechsler Intelligence Scale for Children were collected from the subjects' files.

To test the relationships of perceptual abilities with reading achievement and intelligence, data were submitted to an analysis of Pearson product moment correlation and canonical correlation. Next, on the basis of totaled visual and auditory subtest scores on the PTB, subjects were grouped according to modality strengths and weaknesses into one of five groups: high visual-high auditory, high visual-low auditory, low visual-high auditory, low visual-low auditory and no preference. An analysis of variance was computed on the mean group scores to determine if modality patterns were related to reading achievement and intelligence.

Results

Each of the visual perceptual abilities (visual discrimination, visual memory and spatial orientation) and each of the auditory perceptual abilities (auditory discrimination, auditory memory and auditory sequential memory) generally showed significant but small relationships to reading achievement. When these perceptual abilities were combined to reflect the visual and auditory modality, no relationship was found.

The visual perceptual abilities of visual memory and spatial orientation were slightly related to verbal intelligence, while visual discrimination and the auditory perceptual abilities were not related to either verbal or performance intelligence. No relationship to intelligence was found when the perceptual abilities were combined to reflect modality.

Modality patterns indicating visual and auditory perceptual strengths and weaknesses were not related to reading achievement or intelligence. Those subjects displaying strengths in both the visual and auditory modality did not score higher in reading achievement, nor did they have significantly higher IQ scores than those who displayed weakness in both modalities.

Conclusions and Implications

The following conclusions were drawn from the results of this study: 1. Although a slight relationship was found between each of the perceptual abilities and reading achievement, this study does not support the popular contention that modality preference or weakness is related to the ability to read. 2. Perceptual tests separately analyzed may identify individual differences in reading disability children, but when we combine the results of these tests to reflect a child's modality we lose this diagnostic information. 3. Though modality patterns may be identified in children with reading disability, intelligence is not a factor.

The conclusions from this study imply that the concept of modality patterns may be too simplistic and thus misleading to educators. Therefore, the results of modality testing should not be used to identify a method for teaching reading to children with a reading disability.

The lack of relationship found between modality patterns and reading achievement and intelligence may indicate that auditory and visual modalities cannot realistically be measured in isolation when considering reading, since the reading task is intersensory in nature. Thus, wide scale acceptance of the modality concept as it applies to the education of children with reading disabilities appears to be unwarranted.

Order No. 77-21,918, 119 pages.

THE RELATIONSHIP OF AUDITORY-VOCAL PROCESSING ABILITIES, INTELLIGENCE AND READING IN LEARNING DISABLED CHILDREN

RUSSELL, Barbara Brown, Ph.D.
George Peabody College for Teachers, 1977

Major Professor: Earl E. Davis

The purpose of this study was to examine the relationship of processing abilities, reading achievement, and intellectual characteristics of children who were having difficulty in learning. The subjects were 151 school age students who resided in several northern Mississippi counties. The students were referred to the author by parents and/or teachers to be evaluated for placement in either learning disability or educable mentally retarded special classes. A battery of tests was administered to each student by trained examiners. The test results were then utilized to test seven specific hypotheses related to measurable characteristics of learning disabled children.

The first major purpose of the research was related to auditory-vocal processing and reading. The results indicated that auditory-vocal processing abilities as measured by the DTLA are related to reading achievement. No relationship was found between intraindividual differences in auditory and visual processing and reading achievement. The relationship between VIQ as measured by the WISC and auditory-vocal processing abilities as measured by the DTLA obtained significance within only one group of children studied – those labeled LD.

The second major purpose of the research was the investigation of intellectual characteristics of learning disabled children. The results showed that VIQ and PIQ were not related to reading achievement.

Finally, the author looked at recategorized WISC scores according to Bannatyne's analysis. No specific pattern was found within any group of this sample nor was the discrepancy between recategorized scores related to reading achievement.

Order No. 77-25,127, 115 pages.

A COMPARISON OF THE DEVELOPMENT OF INTERNAL LOCUS OF CONTROL AND RELATED SCHOOL ADJUSTMENT BETWEEN LANGUAGE DISABLED AND AVERAGE STUDENTS IN SECOND, FOURTH, AND SIXTH GRADES

SCANLON, Paulena A. Paschal, Ed.D.
University of Arkansas, 1977

Major Professor: Dr. Bill R. VanZandt

The purpose of this study was to investigate the development of internal-external locus of control and to compare relative school adjustment in language disabled children and children with no language disability. The review of related research indicated that developmental changes take place in locus of control during the elementary grades for normal children. For this reason, grades two, four, and six were selected for observing this developmental process. The review of related research also supported the theory that interference in language functioning, i.e., a language disability, could have an affect on personality development and adjustment.

Method

Three instruments were used to collect data: the Nowicki-Strickland Locus of Control Scale, the Slingerland Screening Tests for Identifying Children with Specific Language Disabilities, and the School Adjustment Rating Form (developed for use in this study). Each child completed the first two instruments while the regular classroom teacher completed the third instrument on each child in her class.

Data were collected on a total of 197 second graders, 173 fourth graders, and 186 sixth graders in regular classes in a public school system. Of the total population at each grade level, only those with average mental ages (90–110 IQ) were considered for selection into the samples for this study. There were in the total populations tested 91 second graders, 68 fourth graders, and 78 sixth graders with average mental ages.

The results of the Slingerland Screening Tests for Identifying Children with Specific Language Disabilities were used for selecting the language disabled children at each grade level. Groups of 20 language disabled children were matched on chronological age with 20 children with no language disability at each grade level.

Results

The locus of control scores were analyzed between the second, fourth, and sixth grades on each of the following groups: the total population, the population of average mental age, not-language-disabled, and the samples of language disabled and not-language-disabled. Results were significant at the .05 level of probability for all groups except the not-language-disabled sample which was significant at the .06 level. Scores became more internal with age for all groups. The pattern of development varied, however, between groups. The pattern of the total populations showed significant differences (at the .05 level of probability) between both the second and fourth grades, and the fourth and the sixth grades. When mental age was controlled for, as in the population of average mental age, not-language-disabled and the sample from that population, the pattern showed a significant difference only between the second and fourth grades. The difference between the fourth and sixth grades was not significant. In contrast, the difference in the language disabled sample was highly significant between the fourth and sixth grades with no difference between the second and fourth grades.

In comparing the school adjustment scores of the language disabled and not-language-disabled samples, there were significant differences (at the .05 level of probability) at all three grade levels with the not-language-disabled groups being better adjusted.

Conclusions

The following three overall conclusions were drawn as a result of this study: 1. There are developmental trends in locus of control in both language disabled children and children with no language disability, but the patterns of this development are not identical. 2. Language disabled children are delayed in their development of internal locus of control when compared to children with no language disability and similar mental ages. 3. Children with no pattern of language disability are significantly better adjusted in school than language disabled children at all three grade levels tested.

Order No. 77-23,349, 67 pages.

AN ANALYSIS OF THE DIETS AND ACADEMIC ACHIEVEMENT IN MATHEMATICS AND READING OF THIRD GRADE PUPILS

STIMSON, Elizabeth Ann, Ed.D.
The University of Toledo, 1977

The purpose of this study was to determine whether or not children reared in middle-income families suffered from malnutrition, even mild-moderate degrees of malnutrition. If so, if their diets were inadequate, what relationship might this condition have to their performance in reading and mathematics? It was hypothesized that there would be no relationship.

The research for this study was conducted in five Lucas County, Ohio, public schools among selected third grade pupils. The sample was drawn from a total population of two hundred fifty-one third grade pupils. The diets and achievement scores of two hundred sixteen of these pupils were analyzed. No special education or learning disabilities pupils were included in the study.

Each child completed three 24-hour food intake questionnaires. These data were compiled into one average 24-hour food intake record. A total dietary score was obtained as well as scores for the following nutrients: dairy, protein, vitamin C, vitamin A, breads and cereals, and fruits and vegetables. Supplementary vitamin intake was recorded. Dessert and soft drink intake was analyzed for data about equivalent sugar intake. A total food score of 15.0 indicated a diet equivalent to two-thirds the Recommended Daily Allowance for children from seven to ten years of age. Only three pupils obtained a score of 15.0. One hundred forty-six achieved diets which met one-half or less the RDA. Protein, dairy, and vitamin A consumption followed the national trend with vitamin A being the least consumed nutrient. The consumption of breads and cereals was approximately one-third the RDA. The mean dietary score was 10.0. The results of the dessert and soft drink analyses indicated that more than two-thirds of the children consumed the equivalent of one-fourth to three-fourths cup of sugar daily.

Teachers responded to the Conners Parent Questionnaire by rating each child's behavior according to predetermined items on the checklist. The data from the questionnaire indicate no important relationship between equivalent sugar consumption and short attention span, apathy, hyperactivity, and problems-with-others.

Pearson Product-Moment Correlation Coefficients were calculated to determine the relationship of total dietary scores to reading and mathematics. Reading and mathematics achievement had been established through the use of Scholastic Testing Service tests given to all third grade pupils attending Lucas County schools in September and October, 1975. The results failed to indicate any important relationship between inadequate diet and academic achievement in reading and mathematics. Even with the effects of I.Q. partialled out, no important relationships were found between total diet and achievement in reading and mathematics. Order No. 77-23,674, 101 pages.

AN INVESTIGATION OF THE RELATIONSHIP BETWEEN AUDITORY DISCRIMINATION, AUDITORY SEGMENTATION AND FIRST GRADE READING ACHIEVEMENT

VITULLO, Marianne Mazarchuk, Ph.D.
University of Maryland, 1976

Supervisor: Dorothy D. Sullivan

Reading authorities have suggested that the ability to discriminate sounds and the ability to segment words into phonemic units are two skills relevant to success in reading. This study was designed to investigate the relationship of these abilities to achievement in decoding. The study also examined the interrelationships of the auditory measures and change over time of performance on these measures.

The following research questions were investigated: Research Questions 1. What is the relationship between the Wepman Auditory Discrimination Test and decoding? 2. What is the relationship between the Reproduction Test and decoding? 3. What is the relationship between the Wepman Auditory Discrimination Test and the Reproduction Test? 4. What is the relationship between the ability to count phonemes in words as measured on the Segmentation Test and decoding? 5. What is the relationship between the ability to match phonemes as measured on the Segmentation Test and decoding? 6. What is the relationship between the ability to count phonemes in words and the ability to match phonemes in words? 7. What are the relationships among the auditory discrimination measures and segmenting ability measures? 8. Will test performance differences be observed between the first and second administration of each of the auditory measures?

Fifty first-graders were randomly selected from three schools in Baltimore County, Maryland. The age of the children ranged from 5 years and 7 months to 6 years and 6 months. Forty-eight of the fifty had attended kindergarten.

Each child was tested individually at the beginning of the school year. The tests administered were the Wepman Auditory Discrimination Test, the Reproduction Test, the Counting Phonemes and Matching Phonemes subtests, the Botel Word Recognition Test. The tests were readministered six months later.

To provide information on the relationships of the variables, Pearson Product-Moment correlations were computed for the scores on the auditory measures obtained during the initial administration of the tests and the decoding score obtained six months later. A step-wise multiple regression analysis was used to determine the contribution of each of the auditory variables to the variance in the independent variable, decoding.

It was found that each of the auditory measures was significantly related to decoding ($p < .05$). Matching phonemes was most strongly related to decoding ($r = .637$) and accounted for forty percent of the variance in decoding.

Significant interrelationships ($p < .05$) were observed between the Wepman Auditory Discrimination Test and Counting Phonemes ($r = .344$) and Matching Phonemes ($r = .493$). The Reproduction Test was significantly related ($p < .05$) to matching phonemes ($r = .371$).

Pre-test and post-test scores for each of the auditory measures were compared using a t-test to determine if performance changes could be observed between the first and second administration of the test. It was found that significant changes ($p < .05$) occurred in the ability to count phonemes ($t = 4.39$) and matching phonemes ($t = 6.90$).

Based on these findings and within the limitations of the study, the following conclusions are presented: Each of the auditory factors is related to achievement in reading. However, except for the matching phonemes variable, the strength of the relationship is not sufficient to identify them as predictors of achievement. The matching phonemes task is the only variable which appears to be related to a degree which might suggest it to be a potential predictor.

Order No. 77-24,141, 87 pages.

HEMISPHERIC SYNCHRONIZATION AS IT RELATES TO READING DISABILITY

WELLS, William, Ed.D.
University of Maryland, 1976

Supervisor: Dr. Charles H. Flatter

This study was designed to study the relationship between hemispheric synchronization as measured by the Brain Wave Analyzer and reading disability.

The primary purpose of this study was to determine whether reading disabled children can be differentiated from non-disabled (normals) and slow learning children on the basis of hemispheric synchronization. A second purpose was to determine if any relationship exists between hemispheric synchronization and reading achievement. The third purpose was to determine if any relationship exists between hemispheric synchronization and intelligence.

If there is a relationship between hemispheric synchronization and reading achievement and if learning disabled children can be differentiated from normal and slow learning children on the basis of differences in hemispheric synchronization, then serious consideration must be given to the Brain Wave Analyzer as an instrument to be utilized for the early and positive identification of reading disabled children.

To carry out these purposes, three research questions were posed. The first question made inquiries about differences in hemispheric synchronization among the three groups, normals, reading disabled, and slow learners, and between the sexes as well. The next question asked about the relationship between hemispheric synchronization and reading achievement. The last question raised concerned the relationship between hemispheric synchronization and intelligence.

Involved in the study were three groups of fourth grade pupils. Each group contained 8 males and 8 females. The first group was composed of sixteen normal subjects, the second, sixteen reading disabled subjects, and the third, sixteen slow learners. All had been tested for reading achievement and non-verbal intelligence. The hemispheric synchronization of each subject was evaluated, using the Brain Wave Analyzer, Model -02.

The hemispheric synchronization score of each group was analyzed for differences, using a 3x2 factorial analysis of the variance procedure. Correlations between hemispheric synchronization and reading achievement and between hemispheric synchronization and intelligence were analyzed, using the Pearson r technique.

In the analysis, no significant difference in hemispheric synchronization were found between normal, reading disabled, and slow learner groups. Significant differences were not found among the sexes, nor were there any significant interactions among the variables. The only significant correlation obtained was between hemispheric synchronization and reading achievement for the slow learner male group.

No evidence was found to substantiate the major research question of the study, namely that normal, reading disabled, and slow learning children can be differentiated on the basis of hemispheric synchronization.

The preponderance of evidence did not support a relationship between hemispheric synchronization and reading achievement. This same relationship was not supported when the effect of intelligence was partialed out.

The preponderance of evidence did not support a relationship between hemispheric synchronization and intelligence.

On the basis of this research, the use of the Brain Wave Analyzer in lieu of other diagnostic instruments presently used to detect reading disabilities, would be premature.

Order No. 77-26,551, 134 pages.